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EXAMINER

ABELSON, RONALD B

ART UNIT	PAPER NUMBER
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2666

DATE MAILED: 10/24/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/166,343

Applicant(s)

JOHNSON ET AL.

Examiner

Ronald Abelson

Art Unit

2663

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 13 September 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-14 and 16-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7, 11-14, 16, 17 and 19-21 is/are rejected.
- 7) ☒ Claim(s) 6, 8-10 and 18 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 September 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

Art Unit: ~~2663~~ 2666

*Response to Arguments*

1. In view of the appeal brief filed on 9/13/2002, PROSECUTION IS HEREBY REOPENED. New grounds of rejection are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

*Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of

Art Unit: 2663

section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 1, 3, 12-14, 16, 20, and 21 are rejected under 35 U.S.C. 102(e) as being anticipated by Bremer (US 6,032,190).

Regarding claims 1, 13-14, and 21, Bremer teaches a method and apparatus for a switching device (fig. 3) for processing data packets (col. 5 lines 19 - 40) from sending ports (fig. 3 Port 0) to destination ports (fig. 3 Port 3). The method comprises storing in a first stage queue packet-related data from a sending port (fig. 3 box 48), determining from the packet-related data which destination ports are to receive the packet-related data in the first stage queue (fig. 3 box 52), storing in a second stage queue associated with each determined destination port the packet-related data from the first stage queue (fig. 3 box 58), and transmitting the packet-related data in the second stage queue to a switch fabric (fig. 3 box 60).

Art Unit: 2666

Regarding claim 3, sending the packet-related data fro the sending port to the first stage queue (fig. 3 Port 0, box 46, 48).

Regarding claim 16, address resolution logic for sending the packet-related data from the sending port to the first stage queue (fig. 3 box 52, col. 5 lines 30 - 33).

Regarding claims 12 and 20, the switch is a crossbar matrix (fig. 3 box 60, 62). Note, the examiner associates a crossbar matrix switch with a standard switch.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bremer as applied to claims 1 and 13 above, and further in view of Demange (US 5,355,522).

Although Bremer teaches storing the packet-related data/packet header (fig. 3 box 48) separately from the packet

Art Unit: 2666

data (fig. box 50), the inventor is silent on the contents of the packet header.

Demange teaches that Ethernet and Token Ring packet (col. 2 lines 39-42) headers contain a pointer to memory (fig. 4 box 402, col. 3 lines 31-33) and destination ports information (fig. 4 box 406, col. 3 line 27).

Therefore it would have been obvious to one of ordinary skill in the art, having both Bremer and Demange before him/her and with the teachings [a] as shown by Bremer, a system for processing packet data and the corresponding packet-related data independently, and [b] as shown by Demange, Ethernet and Token Ring packet headers contain a pointer to memory and destination ports information, to be motivated to modify the system of Bremer by using a packet having a header format as detailed by Demange (fig. 4) if the network is a Ethernet or Token Ring network. This modification can be performed in software. This would improve the system by making it compatible with preexisting standards.

6. Claims 4 and 5, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bremer as applied to claims 1 and 13 above, and further in view of Hebb (US 6,320,864).

Art Unit: 2666

In addition to the limitations listed in claim 1, Bremer teaches the first stage queue includes multiple first stage queues (fig. 3 box 48, fig. 4 box 152, 154, col. 7 line 29 - 35).

However, Bremer fails to teach storing the header data based upon the characteristics of the packet / prioritization.

Hebb teaches storing packets based upon priority information that is found in the header (fig. 3 box 100a-d, col. 7 lines 17 - 19).

Therefore it would have been obvious to one of ordinary skill in the art, having both Bremer and Hebb before him/her and with the teachings [a] as shown by Bremer, a system for processing packet data and the corresponding packet-related data independently, and [b] as shown by Hebb, storing information in parallel queues based upon priority, to be motivated to modify the system of Bremer by storing information in the queues (fig. 4 box 152, 154) based upon priority. This could be accomplished by reading the priority information found in the packet header. This would improve the system since packets with higher priority may be processed first.

Art Unit: 2666

7. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bremer as applied to claim 1 above, and further in view of Galand (US 5,956,341).

In addition to the limitations listed in claim 1, Bremer teaches the first stage queue includes multiple first stage queues (fig. 3 box 48, fig. 4 box 152, 154, col. 7 line 29 - 35).

However, Bremer fails to teach storing the header data based upon the characteristics of the packet / quality of service (QoS).

Galand teach storing the header data based upon QoS (fig. 8 box 802, col. 6 lines 49 - 53).

Therefore it would have been obvious to one of ordinary skill in the art, having both Bremer and Galand before him/her and with the teachings [a] as shown by Bremer, a system for processing packet data and the corresponding packet-related data independently, and [b] as shown by Galand, storing information in queues based QoS, to be motivated to modify the system of Bremer by storing information in the queues (fig. 4 box 152, 154) based upon QoS. This could be accomplished by reading the priority information found in the packet header. This would improve the system since packets with requiring higher QoS may be processed first.



Art Unit: 2666

8. Claims 11 and 19 rejected under 35 U.S.C. 103(a) as being unpatentable over Bremer as applied to claims 1 and 13 above, and further in view of the applicant's admitted prior art.

In addition to the limitations listed in claim 13, Bremer teaches multicasting (col. 6 lines 18 - 37).

The applicant's admitted prior art teaches a shared memory switch fabric for multicasting (pg. 2 lines 12 - 17).

Therefore it would have been obvious to one of ordinary skill in the art, having both Bremer and the applicant's admitted prior art before him/her and with the teachings [a] as shown by Bremer, a system for processing packet data and the corresponding packet-related data independently, and [b] as shown by the applicant's admitted prior art, a shared memory switch fabric for multicasting, to be motivated to modify the system of Bremer by replacing the switch fabric (fig. 3 box 60, 62) with shared memory switch fabrics. This would improve the system since each destination port can obtain a multicast packet from its storage location independent of other ports (spec: pg. 2 lines 16-17).

Art Unit: 2666

***Allowable Subject Matter***

9. Claims 6, 8-10, and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter: Regarding claim 6, nothing in the prior art teaches or fairly suggests the packet characteristic is a network protocol type, in combination with the other limitations listed in the claim. Regarding claim 8, nothing in the prior art teaches or fairly suggests the packet is something other than unicast or multicast, in combination with the other limitations listed in the claim. Regarding claims 9 and 18, nothing in the prior art teaches or fairly suggests the second stage queue includes multiple second queues, in combination with the other limitations listed in the claim. Regarding claim 10, nothing in the prior art teaches or fairly suggests the packet-related data is a data packet, in combination with the other limitations listed in the claim.

***Prior art is of record***

Art Unit: 2666

11. The prior art is of record but not relied upon in the office action. Ramakrishnan (6,049,546) teaches multiple first and second queues as specified by the applicant (fig. 3).

### *Conclusion*

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ronald Abelson whose telephone number is (703) 306-5622. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on (703) 308-5340. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-9600.

Ronald Abelson  
Examiner  
Art Unit 2663

Application/Control Number: 09/166,343

Page 11

Art Unit: 2666

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October 11, 2002

*Seema S. Rao*

*SP E AU 2666*

*10/16/02*